

REMARKS

Claims 13, 14, 16, 17 and 18 have been rejected under 35 USC 102(b) as being anticipated by Umeda. Claims 12, 6 and 7 have been rejected under 35 USC 103(a) as being unpatentable over Umeda in view of Michishita. Claim 19 has been rejected under 35 USC 103(a) as being unpatentable over Umeda and further in view of Michishita. Claims 15, 20 and 21 have been rejected under 35 USC 103(a) as being unpatentable over Umeda and further in view of Lenson. Applicants respectfully traverse these grounds of rejection and urge reconsideration in light of the following comments.

The presently claimed invention is directed to a submerged compact breakwater generating structure which is smaller than conventional breakwater generating structures, can be constructed at a lower cost and yet still possesses a high breakwater producing efficiency. Since the breakwater structure of the present invention is submerged, the structure always is provided completely under water and does not constitute an "eyesore" to the natural beauty of a beach. As such, beach-goers can enjoy the beach along with the natural beauty associated therewith without the breakwater structure interfering with the aesthetic beauty of the beach.

In the breakwater structure of the present invention, wave energy is reduced by the submerged structure through the production of a breaking wave, which is introduced into slanted grids and returned off-shore from an opening. The breaking wave is caused by a sudden change of the depth of the seawater. It is respectfully submitted that the prior art cited by the Examiner does not disclose the presently claimed invention.

The Umeda reference discloses a breakwater structure which is erected above the seawater level in order for the waves to collide against a front wall 18 of the structure and be reflected thereby. Although this reference discloses a breakwater structure having a vertical wall 14 at its front,

the breaking waves are not produced by this structure as is in the present invention. As such, it is respectfully submitted that the presently claimed invention clearly is distinguishable over this reference.

The Michishita reference discloses a breakwater structure which is also provided above sea-level and includes a throughpath 18 disposed along the base of a mound. However, there is no disclosure in this reference regarding the provision of a submerged breakwater structure which produces a breaking wave which is introduced into slanted grids and returned off-shore from an opening. As such, it is respectfully submitted that the Michishita reference in combination with Umeda does not disclose the presently claimed invention.

As discussed previously, the Lenson reference is directed to a breakwater structure having a wave energy dissipating principle completely different from that of the present invention. In Lenson, the wave propagates along the inclined surface of the structure and passes through passages 20 and loses its kinetic energy by friction against the peripheral walls of the passage. The wave energy is additionally dissipated by vertical wall 24 which reflects back the waves. As to the previously discussed reference, part of the structure of Lenson et al is provided above sea level and, therefore, this reference does not disclose a submerged structure as required by the present claims. As such, the currently claimed invention is clearly patentably distinguishable over Lenson in combination with either of the previously discussed references.

Enclosed herewith for the Examiner's benefit is an artist's rendition of the breakwater structure of the present invention. As can be seen from the enclosed illustration, the presently claimed invention clearly is patentably distinct from the references cited by the Examiner.

The Examiner is respectfully requested to reconsider the present application and to pass it to issue.

Respectfully submitted,


Terryence F. Chapman

TFC/smd

Encl: Marked-Up Amended Claim 12
Artist's Illustration
Postal Card

136.0112

12. (~~New~~Amended) A submerged breakwater generating structure comprising a reef having slits provided at an upper portion thereof and a vertical wall defining said reef at an offshore side thereof, the vertical wall having at least one opening at a lower end thereof, said reef being formed as two stages and placed on a mound, a through path being provided from said reef to a coastal side of said breakwater generating structure and an opening end of said through path being provided to a base of said mound.

